

What Is Claimed Is:

1. A storage control apparatus for accessing a storage device according to data access request from a requesting apparatus, comprising:

a first controller which has a first cache memory and is in charge of a first storage device out of a plurality of storage devices; and

a second controller which has a second cache memory and is in charge of a second storage device out of said plurality of storage devices, wherein

said first controller further comprises a first mirror management table for managing a mirror area of said second cache memory, and said second controller further comprises a second mirror management table for managing the mirror area of said first cache memory,

and wherein when said first controller received a data write request from said requesting apparatus, said first controller allocates a page in a read/write area of said first cache memory, acquires a storage page in the mirror area of said second cache memory referring to said first mirror management table, writes the write data from said requesting apparatus to the page allocated in the read/write area of said first cache memory, and copies the write data to the acquired page in the mirror area of said second cache memory.

2. The storage control apparatus according to Claim 1,  
wherein said first and second controllers mutually notify the  
sizes of said first and second cache memories, allocate the  
mirror areas of said first and second cache memories  
5 according to said sizes, and create said first and second  
mirror management tables.

3. The storage control apparatus according to Claim 1,  
wherein said first controller writes back the data, which is  
10 written in the page allocated in the read/write area of said  
first cache memory, to said storage device, then releases  
said acquired page of said first mirror management table.

4. The storage control apparatus according to Claim 1,  
15 wherein when said first controller is degraded, said second  
controller takes charge of the storage apparatus which said  
first controller is in charge of, and links the copy page in  
the mirror area of said second cache memory to said  
read/write area.

20 5. The storage control apparatus according to Claim 4,  
wherein said second controller disables read/write processing  
to the mirror area of said second cache memory.

25 6. The storage control apparatus according to Claim 1,  
wherein when said first controller received a data write  
request for a plurality of pages from said requesting

apparatus, said first controller allocates a plurality of pages in the read/write area of said first cache memory, acquires a plurality of storage pages in the mirror area of said second cache memory referring to said first mirror management table, writes the write data from said requesting apparatus to the allocated page in the read/write area of said first cache memory, copies the write data to the acquired page in the mirror area of said second cache memory, and writes the data of the next page to the next page allocated in the read/write area of said first cache memory during said copying.

7. The storage control apparatus according to Claim 1, wherein each one of said first and second controllers comprises:

a control unit for controlling said cache memory and said storage device; and

a node channel circuit for performing communication between said controllers.

8. The storage control apparatus according to Claim 7, wherein said control unit instructs said node channel circuit to execute the DMA transfer of data of the page allocated in the read/write area of said first cache memory to the acquired page in the mirror area of said second cache memory, and performs said copying.

9. A storage control method for accessing a storage device according to a data access request from a requesting apparatus, comprising the steps of:

allocating a page in a read/write area of a first  
5 cache memory disposed in one controller of a pair of  
controller when said one controller receives a data write  
request from said requesting apparatus;

acquiring a storage page in a mirror area of a  
second cache memory referring to a first mirror management  
10 table which is disposed in said one controller for managing  
the mirror area of said second cache memory of said other  
controller;

writing write data from said requesting apparatus  
to the page allocated in the read/write area of said first  
15 cache memory; and

copying the write data to the acquired page in the  
mirror area of said second cache memory after said writing.

10. The storage control method according to Claim 9,  
20 further comprising the steps of:

mutually notifying the sizes of said first and second  
cache memories between both controllers;

allocating the mirror areas of said first and second  
cache memories according to said sizes; and

25 creating said first and second mirror management tables.

11. The storage control method according to Claim 9,

further comprising the steps of:

writing back the data, which is written in the page allocated in the read/write area of said first cache memory, to said storage device; and

5 releasing said acquired page of said first mirror management table when said write back completes.

12. The storage control method according to Claim 9, further comprising a step of taking charge of the storage  
10 device which said one controller is in charge of by said other controller when said one controller is degraded, and linking the copy page in the mirror area of said second cache memory to the read/write area of the second cache memory.

15 13. The storage control method according to Claim 12, further comprising a step of disabling read/write processing to the mirror area of said second cache memory.

20 14. The storage control method according to Claim 9, further comprising a step of writing the data of the next page to the next page allocated in the read/write area of said first cache memory during said copying when said one controller receives a data write request for a plurality of pages from said requesting apparatus.

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15. The storage control method according to Claim 9, wherein each one of said pair of controllers comprises a

control unit for controlling said cache memory and said storage apparatus, and a node channel circuit for performing communication between said controllers.

5        16. The storage control method according to Claim 15, wherein said copying step comprises a step of instructing said node channel circuit to execute the DMA transfer of the data of the page allocated in the read/write area of said first cache memory to the acquired page in the mirror area of  
10 said second cache memory and performing said copying.